

ABOUT THIS MAP

Figure 4.17 shows the overall density for harbor porpoise (*Phocoena phocoena*) in the CDAS central California data set (1980-2003). Cell size is 10' latitude by 10' longitude, and contain data in all available seasons from 1980-2003. Corrections to density estimates were made for sightability, time spent underwater, or not seen. The harbor porpoise is one of the most commonly sighted cetaceans in the study area. The color and mapping intervals were selected to show the most structure and highlight significant areas, while allowing comparisons among species. Cells that were surveyed but in which no harbor porpoises were observed have a density of zero. Areas not surveyed appear white; no information is available for these areas. Dark blue lines indicate the boundaries of the National Marine Sanctuaries in the study area: Cordell Bank, Gulf of the Farallones and Monterey Bay. Bathymetric contours for the 200 meter and 2,000 meter isobaths are shown in blue.

DATA SOURCES AND METHODS

Densities for marine mammals at sea in this assessment are based on the CDAS central California data set (2003), developed using software called Marine Mammal and Seabird Computer Data Analysis System (CDAS), by the R.G. Ford Consulting Co. This data set contains data from eight survey programs (five aerial surveys, three ship surveys) conducted between 1980 and 2003; the data extends from Pt. Arena to Pt. Sal in the study area. See the Data and Analyses section of this chapter for information on the at-sea survey data sets and methods used to estimate density.

RESULTS AND DISCUSSION

Although protected under the Marine Mammal Protection Act, the harbor porpoise is not listed as Federally threatened or endangered under the Endangered Species Act. Eight stocks of harbor porpoise are identified off the coasts of California, Oregon and Washington and Alaska; three of these stocks occur in the north/central California study area of this assessment: Morro Bay, Monterey Bay, and the San Francisco-Russian River (Carretta *et al.*, 2006). The harbor porpoise occurs year-round in the study area, mostly in the coastal ocean, and occasionally in bays, harbors and estuaries; confirmed estuarine sightings occurred in San Pablo Bay, San Francisco Bay, Tomales Bay and Elkhorn

Slough (Harvey, Keiper, Allen, pers. comm.). In the CDAS central California data set (1980-2003), the harbor porpoise was the fifth most numerous small cetacean sighted, with 577 sightings and 1,160 individuals.

In the CDAS data used in this study, harbor porpoise occurred over the shelf, and mostly in nearshore areas over the inner shelf, and in all three central California national marine sanctuaries. Harbor porpoise sightings range to the north and south of the study area and although seasonal movements appear to be limited, they respond to seasonal or interannual changes in ocean conditions and food availability (Carretta *et al.*, 2001). The mapped occurrence pattern only confirms that harbor porpoises have been sighted in certain areas; rather than a real absence from an area, the absence of sightings may reflect insufficient survey effort.

See an additional map for harbor porpoise in Figure 4.29, from NOAA's Southwest Fisheries Science Center stock assessment surveys (July-December, 1991, 1993, 1996 and 2001). This map provides additional information on the range of the species off the coasts of California, Oregon and Washington.

Harbor porpoise stocks were impacted by incidental fishing mortality, mostly from gillnet fisheries, until the 2002 closure of this fishery, inshore of the 60 fathom (110 m) isobath.

Harbor porpoises feed on a variety of small, schooling fishes and cephalopods including squid, herring, anchovies, hake and rockfish. See tables in this chapter on population estimates, spatial occurrence and life history and management for more information on this species.